# MCBA®

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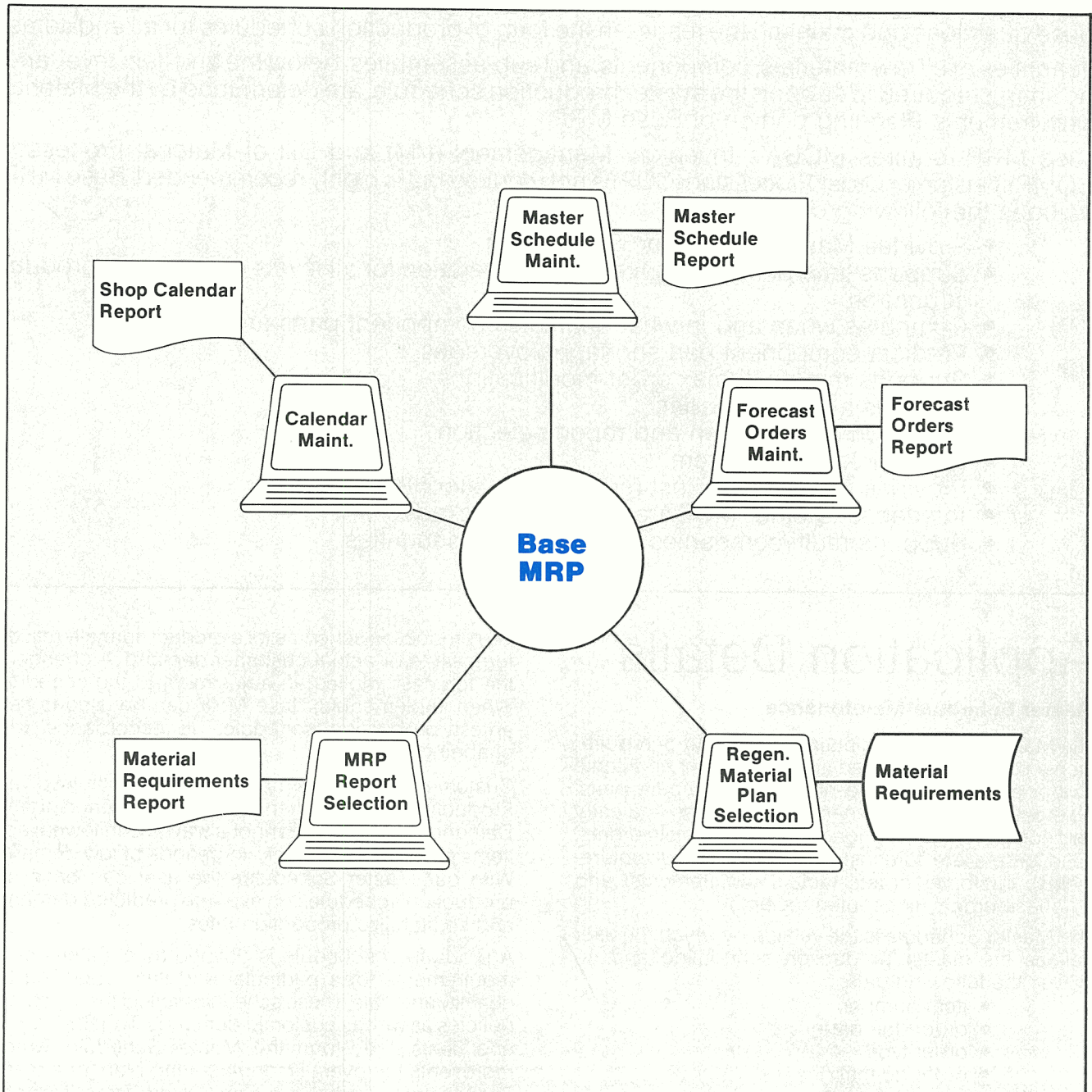Telephone: (213) 957-2900  Telex: 194188

# BASE MATERIAL REQUIREMENTS PLANNING
## in DIBOL®

# Application Overview

Base Material Requirements Planning (Base MRP) is a first in the industry for several reasons: (1) it is an "introductory" MRP incorporating the essentials, leaving the advanced functions to MCBA's Full MRP, (2) it was designed by users but coded, tested and documented by MCBA; (3) it is simple to use and understand, therefore the user can be accountable for its results; and (4) it integrates fully with MCBA's manufacturing packages which themselves fully integrate to MCBA's latest state-of-the-art accounting packages.

Until now, small manufacturers could not afford MRP because of the large computer system required to run it. Base MRP provides the functions required by a small-to-medium manufacturer on an affordable computer configuration.

Every manufacturer has the same fundamental concerns: What products should be produced? In what quantity? By what date? Without the solutions to these concerns, no detailed planning is possible. Base MRP with Master Production Scheduling provides the vehicle to answer these questions and maintain the results in the form of production schedules for all end items.

Quantities of all raw materials, components, and sub-assemblies, below the end item level, and the timing required to support the master production schedule, are determined by the Material Requirements Planning portion of Base MRP.

Base MRP requires MCBA's Inventory Management (I/M) and Bill of Material Processor (BOMP); Customer Order Processing (COP) is not required but is highly recommended. Base MRP includes the following capabilities:

- Provides Master Production Scheduling.
- Supports time-phased requirements generation for all levels of the user's product structures.
- Computes when and in what quantities component parts are required.
- Predicts component part shortages/overages.
- Supports min/multi/max order modifications.
- Provides a daily calendar.
- Allows on-line initiation and report selection.
- Is a "bucketless" system.
- Provides an extremely fast regeneration algorithm.
- Interfaces to other MCBA application packages.
- Supports multi-companies and password securities.

# Application Details

## Master Schedule Maintenance

The Master Schedule contains orders and/or requirements over a user-defined time horizon for end-items and/or any other salable products, e.g. spare parts. Master schedule maintenance provides on-line entry and editing to add, change/inquire and delete orders. Valid orders are forecast orders (projected requirements), customer orders (actual requirements) and purchase orders (scheduled receipts).

The Master Schedule is the vehicle by which the user defines his master production scheduling and includes the following data:

- item number
- order due date
- order type
- order quantity
- order number

The production schedule for a product normally reflects forecasted or actual customer demand. A change in the forecast implies an adjustment to the schedule. When implemented, Base MRP can be used to help adjust production schedules in accordance with changing demand.

Customer demand is not the only factor involved. Production rates are often leveled over a period of time. Demand fluctuations cannot always be followed, and items are made for "stock" in periods of low demand. With our Master Scheduler, the user can base his production schedules on average predicted demand, and so stabilize production rates.

A production schedule is defined as a statement of requirements for a particular end item, specified by quantity and date. These schedules reflect management policies as well as customer demands. Together, for all end items, they form the Master Schedule, which represents the overall manufacturing plan for a plant. The Master Schedule is a plan of production; it is not a

forecast. The functions of developing a forecast and laying out a schedule of production must be differentiated.

Another way of saying it is a Master Schedule is a statement of future requirements on production resources.

The print Master Schedule feature can be run on request; it may be printed, displayed, or spooled onto a disk for later printing. The run-time selections allow the Master Schedule to be seen in (1) item-date or date-item sequence and (2) ranges by starting/ending item number, product category and/or starting/ending due date.

The user has another method of getting orders into the Master Schedule. The posting function of master schedule maintenance allows the user to (1) copy purchase order data from the purchasing file in I/M, (2) copy customer order data from the customer order line file in COP and (3) copy forecast order data from the forecast orders file in Base MRP.

## Forecast Orders Maintenance

Complete forecast orders maintenance is provided, allowing: add, change/inquire, and delete. Forecasts are by definition never right; but any business decision must involve some kind of a forecast. The main function of a forecast is to minimize the future errors of present decisions. The user may consider the forecasting function in MCBA's I/M or some other technique to project end-item demand in the future. Whichever way is chosen, the results can be entered in this module. After forecast orders are entered they can be changed, deleted, purged and/or printed. At the user's option, all or any portion of the forecast orders may be posted to the Master Schedule.

The *Forecast Orders Report* can be run on request; it may be printed, displayed, or spooled onto a disk for printing later.

## Regenerate Material Plan

Quantities of all raw materials, components and sub-assemblies below the end-item level, and the timing required to support the Master Schedule are determined in this module.

The user can choose, at run-time, which formula that the regeneration will use for each item's initial quantity available. The options are:

- on hand
- on hand - allocated
- on hand + on order
- on hand + on order - allocated
- zero

What these options do is allow the user to run even if all the supporting systems are not up and running.

Normally, Base MRP will use "on hand" and calculate when allocations from customer orders and when scheduled receipts from I/M's Purchase file will occur.

However, if customer orders are not being used by Base MRP, the user can still operate by choosing "on hand - allocated" which means an item's beginning on-hand quantity is reduced by allocations generated by customer orders and/or shop orders.

If the user does not have scheduled receipts in the

Master Schedule, he can still operate by choosing "on hand + on order" which means an item's beginning on-hand quantity is increased by any scheduled receipts from purchase orders and/or shop orders.

The "on hand + on order - allocated" option is a combination of the above two options.

The "zero" option may be chosen when the user just wants to see what the generated gross requirements are below the end-item level.

We selected the Regenerative method of implementing MRP because of five overriding reasons:

- It is easier to use.
- It can be run on demand.
- It requires less correct data.
- It requires less supporting systems.
- It produces more results per man-hour of effort.

## Material Requirements Report

The *Material Requirements Report* may be run after a regeneration has completed. This report prints material requirements over a time horizon subdivided into as many as 12 user-defined periods. This is an extremely flexible report.

The user has 17 report options from which to choose including:

- starting/ending item number
- starting/ending low level code
- by a specific product category
- negative requirements within lead time
- by a specific buyer/analyst
- by period or set of periods

Six lines per item can appear on the report; the user may optionally omit any of them. They are (per period):

- gross requirements
- projected inventory
- expected receipts
- net inventory
- planned orders (net requirements offset by lead time)

## Calendar Maintenance

The calendar maintenance feature allows the user to set up multiple calendars to conform to the days his business is open or closed. Calendar periods are defined by the user.

Calendar maintenance includes:

- add a new year
- change/inquire an existing year
- purge oldest year

There are four calendars in all, three of which can be used by Base MRP; the other is the shop days calendar which is only used by MCBA's Shop Floor Control. The three calendars used by Base MRP allow the user to establish three different views of the same data. For example, one calendar may be all weeks; another all months; and the third all quarters; or any combination. The periods in these calendars are totally user-defined down to the day.

The *Calendar Report* may be run on request; it may be printed, displayed, or spooled on disk for later printout.

## Complete Printer Spooling

Any report generated by Base MRP may be spooled to a disk file at the user's option. Using the print spooled reports application, the user may at any later time review what reports are currently stored on disk and print the ones he wishes. Any report may be printed any number of times, starting from whatever page number within the report the user chooses.

## Interfaces to Other MCBA Packages

Base MRP requires MCBA's Inventory Management (I/M) and Bill of Material Processor (BOMP). It also will interface to Customer Order Processing which is recommended if the user wants to pull customer orders into the Master Schedule. I/M is needed for item master data as well as data on scheduled receipts in its purchasing file. BOMP is needed because it contains the parent-component relationships for the user's product lines.

## Security

The security system allows up to 200 passwords and provides access restrictions at the file level by company.

## Multiple Companies

Multiple company support allows up to eight companies to use the system at any time. Most users do not have this many but will still find this feature very useful for test files and/or for operator training.

## Regeneration Logic

Due to the complexity and the man-months of effort in designing and coding the regeneration logic, along with our proprietary interest in the result, MCBA will, in the case of a few Base MRP programs, be shipping object code only.

## Record Size

Requirements Master............... 24 characters
Calendar.......................... 380 characters
Master Schedule .................. 48 characters
Forecast Orders .................. 48 characters

## Run-Time Size

Approximate disk space requirements for BMRP run-time/object modules is 677KB.